

MORS FORCE STRUCTURE SPECIAL MEETING WG 2 PRESENTATION

# **Sustaining Recruiting Resources within a Band of Excellence**

**(Army Studies Program Proposal #USAAC10246)**

TASC Heritage Conference Center, Chantilly, VA  
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Center for Accessions Research

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# Agenda

- ▶ Problem Definition
- ▶ Our Approach
- ▶ Model Demonstration

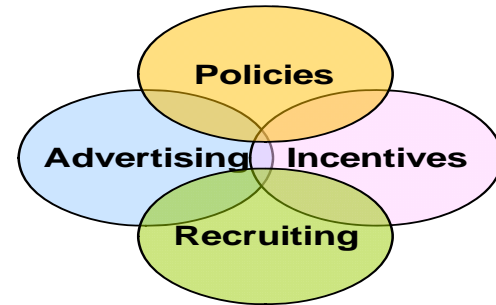


## “From First Handshake to First Unit Assigned”

### Army Accessions Process

- ▶ Recruiting for the Army's officer, warrant officer, and enlisted forces and transforming volunteers into soldiers and leaders to meet the human resource needs of the Army





## What is the underlying problem?

- ▶ In order to sustain the all-volunteer force, the Army must recruit large numbers of high-quality youth each year, regardless of the recruiting environment (**Drivers**)
- ▶ The Army has several resources and policies available (**Levers**) to meet recruiting market challenges, but our current resource allocation tools are generally stove-piped, do not include all relevant inputs, address only the near-term horizon, and do not address 2nd and 3rd order interaction effects
- ▶ Recruiting success historically increases pressure to cut future recruiting resources, without adequate insights into the long-term impacts of these cuts (“Boom and Bust” cycle)

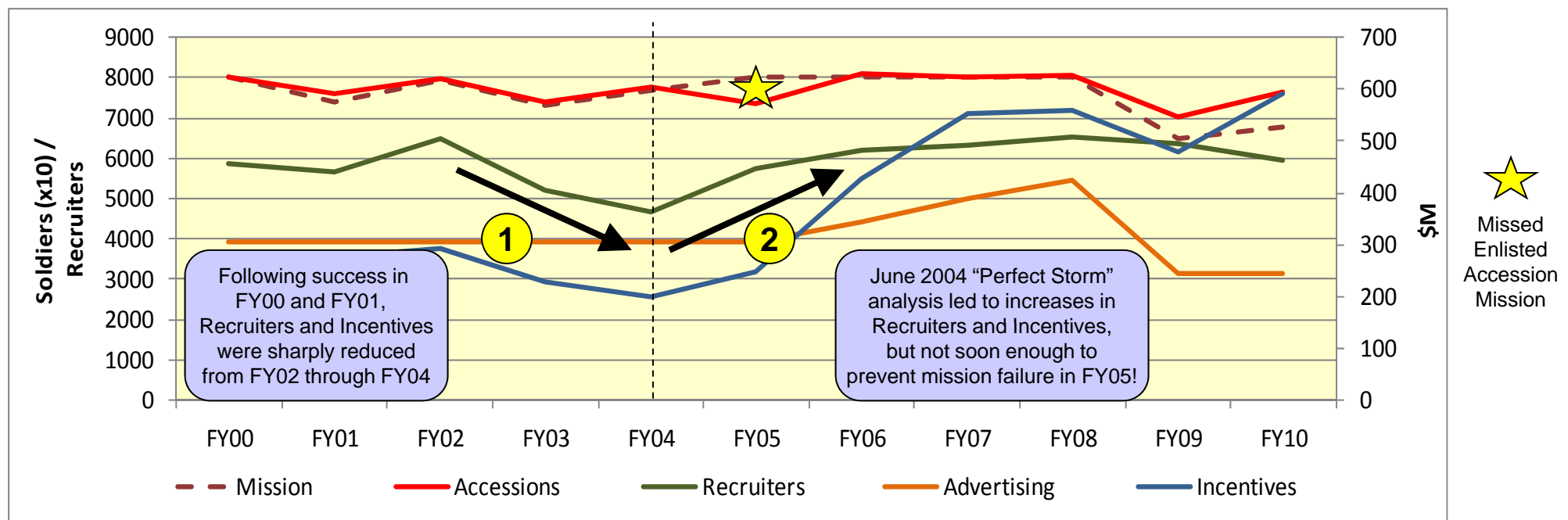
“The key to continued success is the ability to provide the **right level and mix of recruiting resources** to meet recruiting market challenges **promptly.**”

*Source: OSD researchers Bicksler and Nolan,  
“Recruiting an All-Volunteer Force: The Need for Sustained Investment in Recruiting Resources”*



# A “Boom and Bust” resourcing strategy weakens the recruiting infrastructure

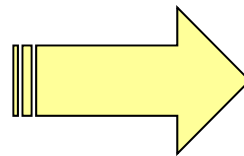
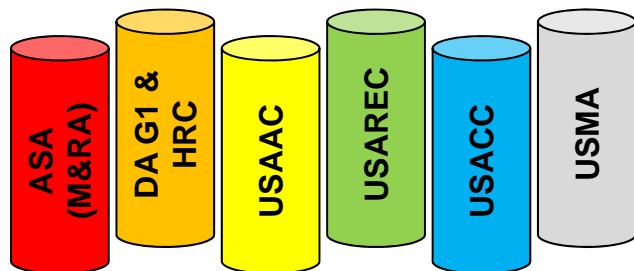
- ▶ Large resource reductions typically result in reduced “awareness” capital and propensity levels, which are expensive to reverse
- ▶ The response time to add resources is slow and resources take time to yield results, which can result in “too little, too late”



## What is needed?

- ▶ The Army needs an analytical tool that supports the **integrated** trade-off analysis necessary to provide informed, synchronized, and defensible resource allocation recommendations
  - Identify "Steady-State" resource levels that support an Accession "Band of Excellence"
  - Conduct Contingency Analyses to assess the impact of changes in the Levers and Drivers
  - Anticipate problems soon enough to take preventative actions
  - Take a long-term perspective in determining resource and policy decisions
  - Predict Return on Investment (ROI) for proposed policies and programs
  - Facilitate training of leaders and analysts on the Accessions Process

### "Stove-pipe" Construct



### "Enterprise" Construct



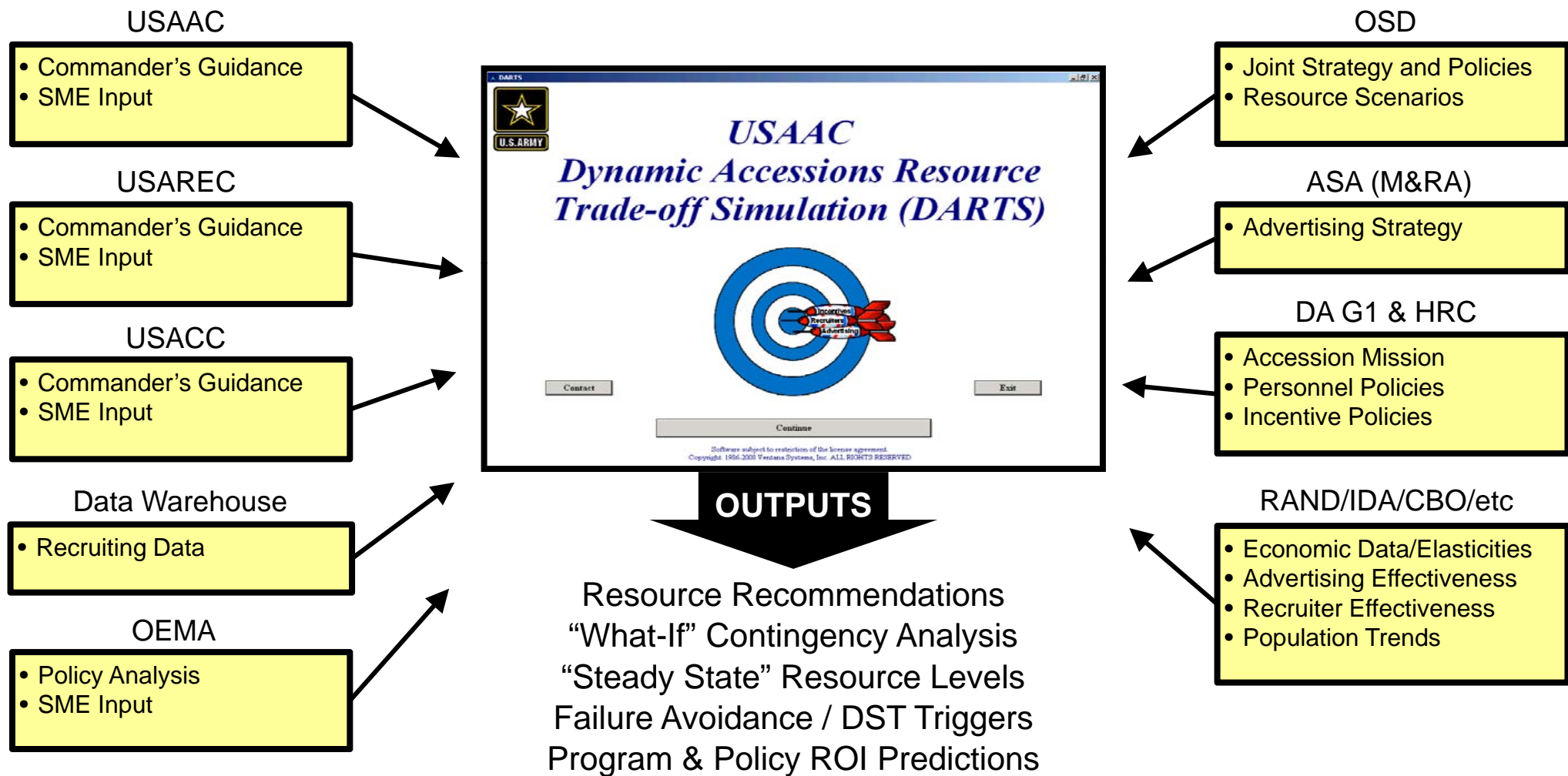
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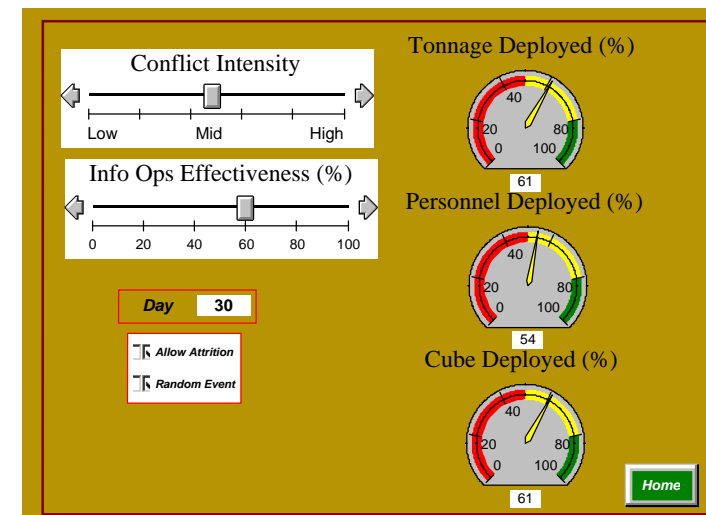
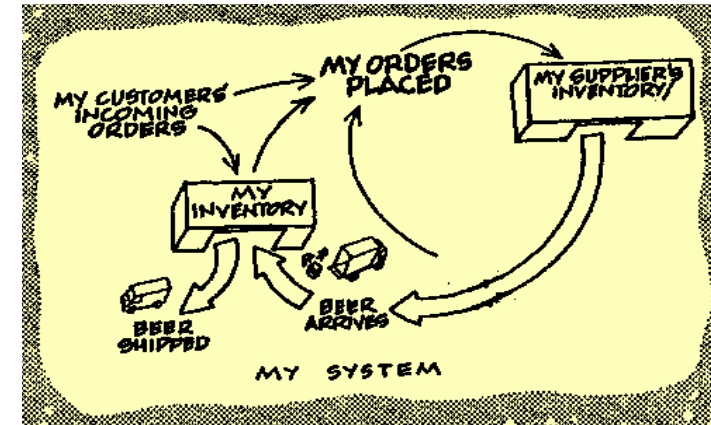


# Develop an **integrated** System Dynamics model of the Accession Process

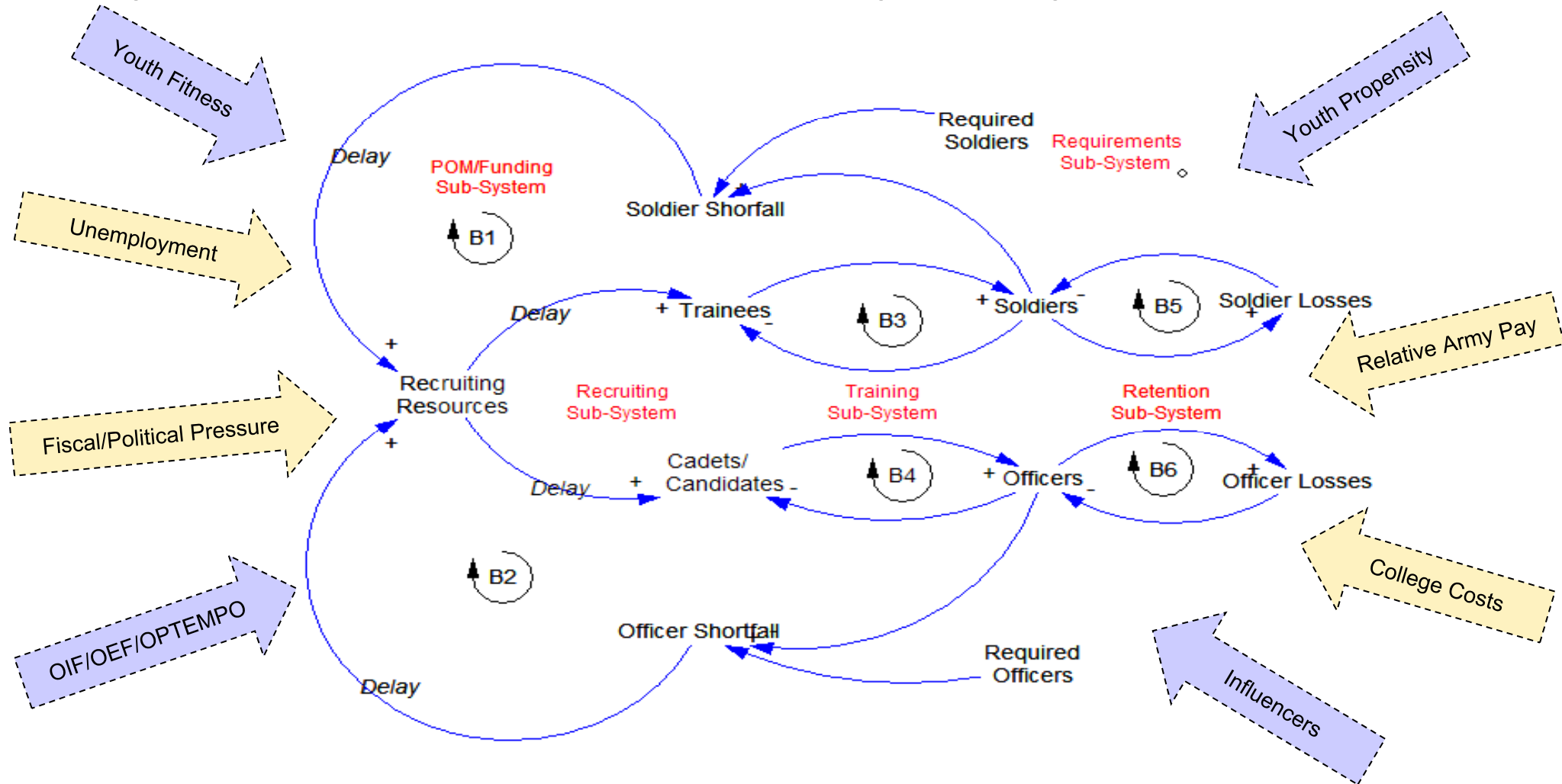


# Why choose System Dynamics?

- ▶ SD provides valuable insights into the behavior of complex “Systems of Systems”
  - Illuminates system physics and levers of change
  - Highlights interactions between system entities
- ▶ SD shows the impact of policy and environmental changes to the system over time
  - Simulates alternate futures quickly
  - Provides a platform for conducting Trade-Off Analyses and Contingency or “What-if” Analyses
- ▶ SD provides a catalyst for learning
  - Provides a “Management Flight Simulator” to improve understanding of the system’s dynamics
  - Fosters a shared view of the enterprise among stakeholders

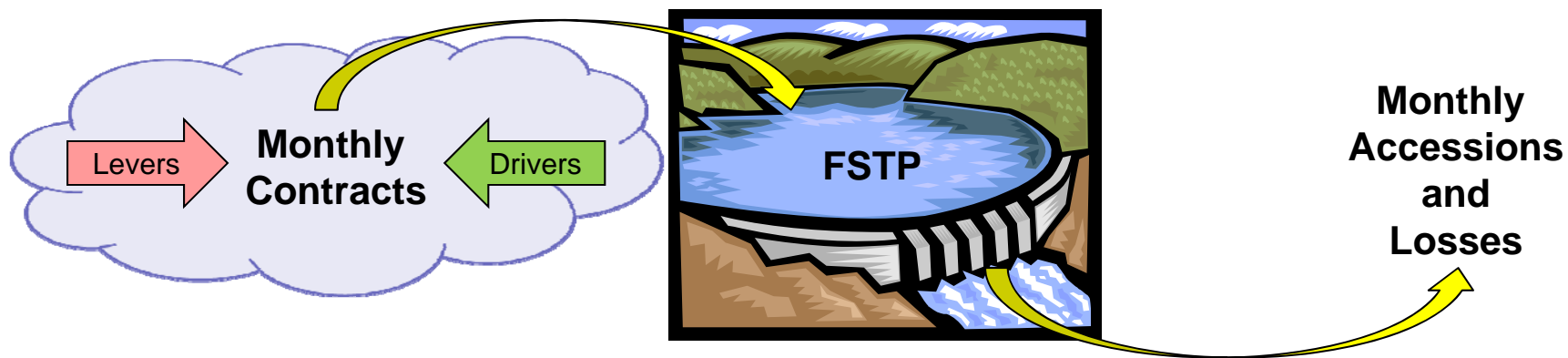


# The Accessions Process is a complex “System of Systems” within a dynamic environment...perfect for System Dynamics!



# Supply and Demand aren't synchronized...the FSTP is used to bridge this gap

- ▶ The Future Soldier Training Program (FSTP) is a “holding pool” of contracted individuals awaiting Initial Entry Training (IET)
  - Inputs: Individuals who sign an enlistment contract (Future Soldiers)
  - Outputs: Future Soldiers who report to IET (Accessions) or attrit from the FSTP
- ▶ The size of the FSTP is a good barometer of accession mission success and risk
  - Too small: Less flexibility to “pull forward” Future Soldiers to cover current contract shortfalls
  - Too large: Increased FSTP losses and management burden
- ▶ The current USAAC goal is to start each FY with 35 percent of the mission in the FSTP



## **The “Center of Gravity” of the model predicts this Supply (monthly enlistment contracts written), given projected Levers and Drivers**

- ▶ The prediction equation coefficients were derived from an analysis of historical data, using a switching model to account for both supply-limited and demand-limited recruiting regimes
  - Drivers: Youth Unemployment, Youth Propensity, Youth Population, Recruiting Regime, etc.
  - Levers: Number of Recruiters, Incentive Spending, Advertising Spending, Monthly Contract Mission, etc.
  - Lagged variables are used for the Levers that exhibit a delay between implementation and results
- ▶ All major Levers and Drivers are used as inputs
  - PRO: The model is responsive to a wide range of policy or environmental changes
  - CON: Some model inputs are much less significant than others
- ▶ The predicted monthly contracts then enter a highly-detailed model of the accession process, which provides insights into overall system performance as a function of defined policies, current processes, and the anticipated recruiting environment



# Subscript scheme enables robust modeling of Soldier performance and Quality Mark analysis

- ▶ Model identifies **36** separate subpopulations
  - Gender: **Male**, **Female**
  - Test Score Category: **TSC I-III A**, **IIIB**, **IV**, **V**
  - Education level: **Senior**, **HSDG**, **Non-HSDG**
  - Prior Service Status: **NPS**, **PS**
  - Component: **RA**, USAR, ARNG

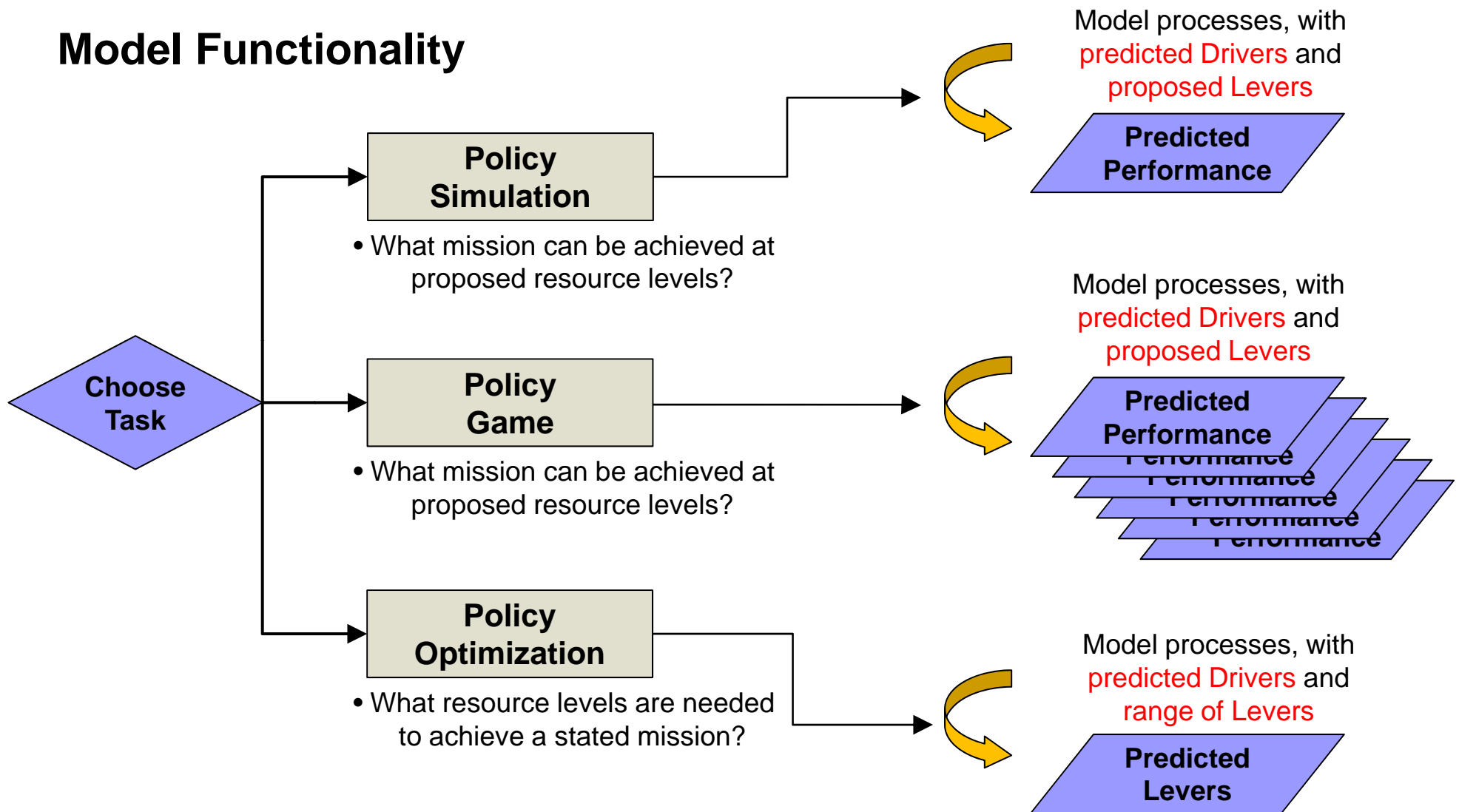
| Prior Service (PS)      |          |          |          |
|-------------------------|----------|----------|----------|
| Non Prior Service (NPS) |          |          |          |
|                         | HSDG     |          | Non-HSDG |
| TSC I-III A             | SMA, SFA | GMA, GFA | NMA, NFA |
| TSC IIIB                | SMB, SFB | GMB, GFB | NMB, NFB |
| TSC IV                  | SM4, SF4 | GM4, GF4 | NM4, NF4 |

| Army NPS Quality Mark Goals |             |
|-----------------------------|-------------|
| % HSDG                      | $\geq 90\%$ |
| % TSC I-III A               | $\geq 60\%$ |
| % TSC IV                    | $\leq 4\%$  |



# Model Functionality



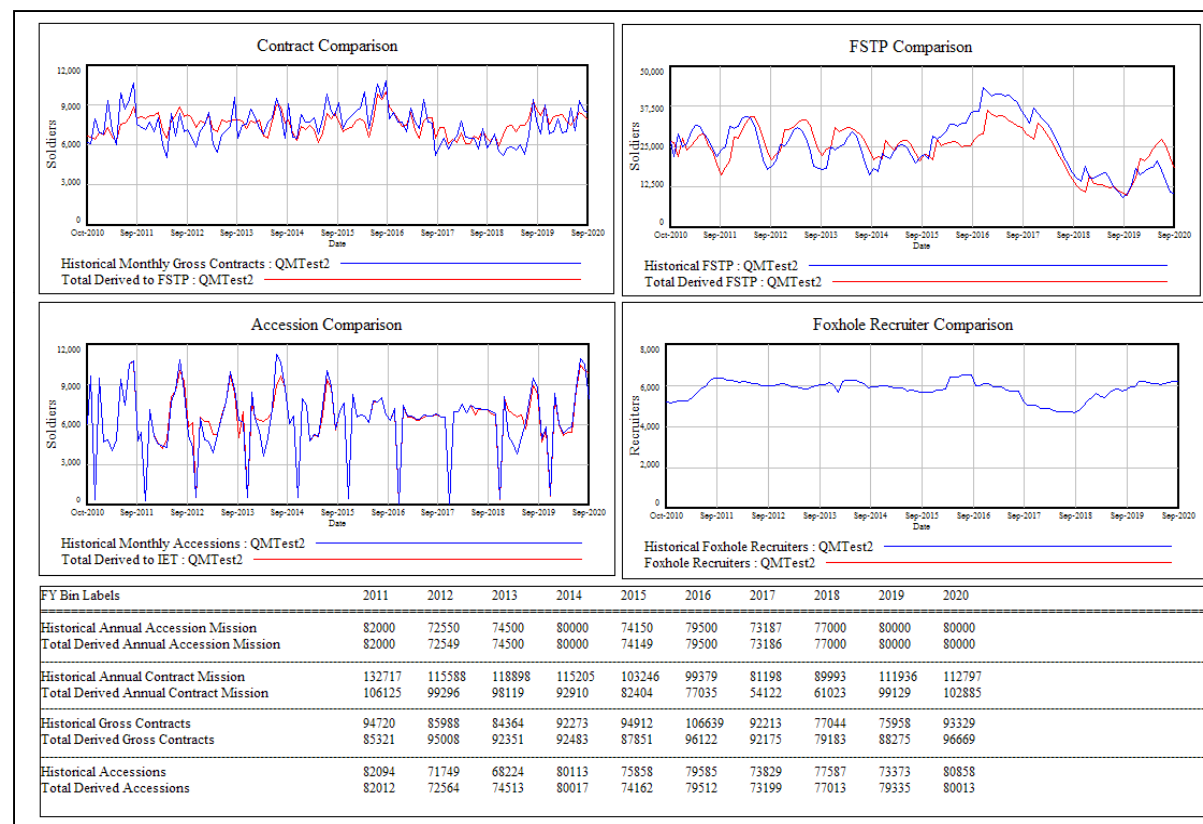
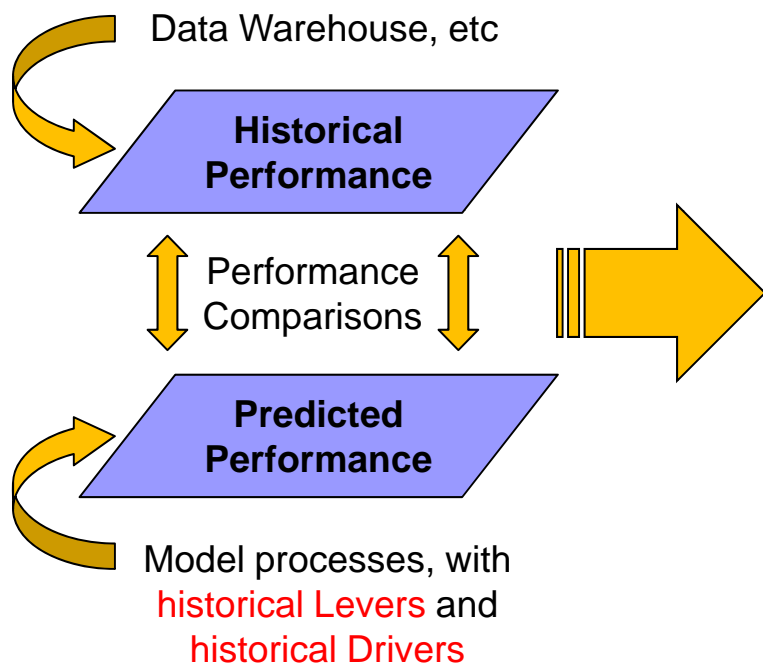
# Model Validation and Verification

- ▶ Verification (“Did we build the thing right?”)
  - USAAC SMEs are reviewing our data repository and assumptions
  - USAAC SMEs are looking “under the hood” to verify that we created a reasonable representation of actual system processes
  - Multiple modelers are inspecting the coding and syntax to verify correctness, completeness, and consistency
- ▶ Validation (“Did we build the right thing?”)
  - USAAC SMEs are comparing model and system behaviors to judge whether the model results are reasonable
  - USAAC SMEs are conducting Beta Testing of the Spiral 1 Model to identify defects, deficiencies, or modification recommendations
  - USAAC SMEs are comparing outputs from the system and the model and examining the differences between them





# Model Validation and Verification

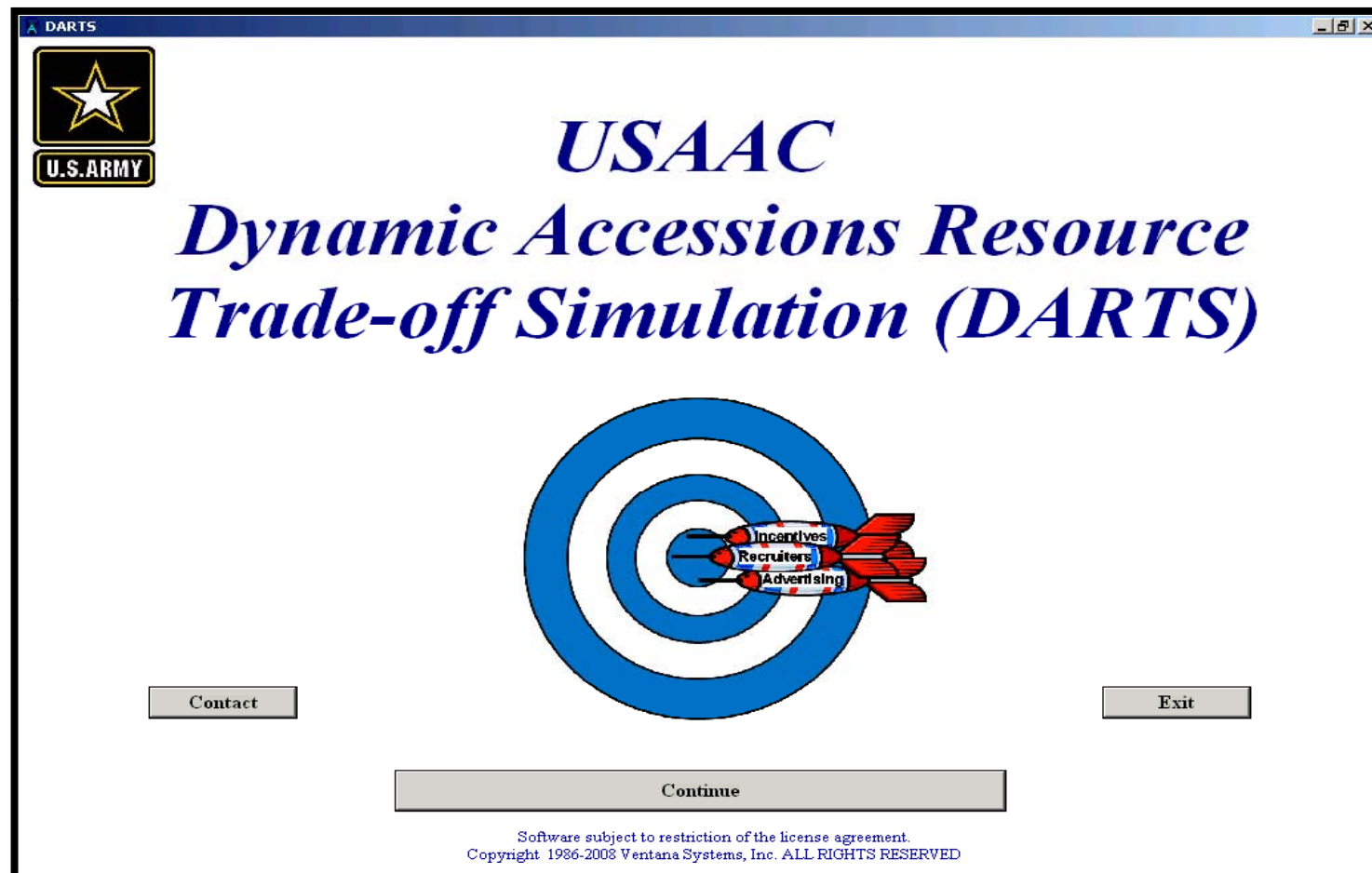


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## Model Demonstration



# Questions?



# Contact Information

## Lead Modeler

**William S. Bland, PhD**  
*Associate*

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Booz Allen Hamilton, Inc.  
6703 Odyssey Drive  
Huntsville, AL 35806  
Tel (256) 922-8749  
Mobile (256) 425-5269  
[bland\\_william@bah.com](mailto:bland_william@bah.com)

## Client Representative

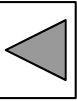
**Don A. Bohn**  
*Operations Research  
Systems Analyst*

HQ USAAC, G2/9,  
Center for Accessions Research,  
Accessions Systems Division  
ATTN: ATAL-AA, Room 6-3-030  
Tel: 502-613-2001  
[don.a.bohn@us.army.mil](mailto:don.a.bohn@us.army.mil)



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## June 2004 Perfect Storm Analysis

- ▶ USAAC G2/9 predicted that recruiting would become more difficult over the next two years
  - Improving economy
  - Fewer recruiters
  - Increased accession mission
  - Recruiting policy changes
  - Protracted war
- ▶ GWOT permanently altered the Army's value proposition



### **Bottom Line:**

Without changes, the Army will fail the FY05 accession mission!

